THE DEVELOPMENTAL EDUCATION OF KENTUCKY'S ENTERING PUBLIC POSTSECONDARY CLASS OF 2004

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In 2001, Kentucky instituted a placement policy mandating that all students entering undergraduate programs at public institutions who received a score of 17 or below on ACT subject exams in math, English or reading be placed in developmental coursework or receive supplemental help in those subjects (3 KAR 2:020, Section 6). This study examines the public postsecondary entering class of 2004 and follows them through their first two years of postsecondary study, examining the extent and effectiveness of developmental programs at Kentucky's public colleges and universities.

Data and Limitations

The data used in this report are administrative data submitted as student unit records by the public postsecondary institutions to the Council's Comprehensive Database between 2004 and 2006. The report is based on descriptive statistics about the students who entered Kentucky's public two- and four-year institutions in the summer or fall of 2004 as full- or part-time students seeking degrees or other credentials, and for whom CPE received the ACT, SAT, or standardized on-campus placement exam scores needed to classify their preparation level. A total of 26,087 students who entered Kentucky's public colleges and universities in 2004 are included in this study.

There are a few important data limitations to keep in mind while reading this report. Institutions have been asked to submit only the first developmental education course that a student takes in a given subject, not the first course in which they were successful or the last course in a sequence. Therefore, students who fail or withdraw from their first developmental course but go on to successfully complete a second or subsequent course are not counted as having successfully taken a developmental course in this study. As such, the developmental courses in this report can be thought of as reporting a student's minimum exposure to developmental education, not their final or complete developmental education. This data limitation has been addressed in the data collection process and will not recur in future reports.

Another data limitation concerns college-level courses that are supplemented for reading. The policy provides institutions an option to offer college-level courses with supplemental help instead of developmental courses which do not confer college credit. At the time that the method for collecting the data used in this report was designed, it was thought that the only college-level courses that would be supplemented for reading would be in the social sciences. This is not the case, however, as institutions have developed supplemental reading courses in the sciences, humanities and other subjects. These courses are not captured in the current data collection, resulting in an undercount of students taking supplemented college-level courses in reading at the three institutions that offer these courses: Louisville, Northern and Western.



It is also important to note that this study does not include all the types of academic support that are provided to underprepared students, only developmental or supplemental courses and placement exam results. Many institutions provide other types of developmental services to underprepared students that are not captured in the Council's data collection, such as individual tutoring. For instance, the University of Kentucky does not offer developmental coursework in English or reading, but instead provides tutors and other academic support services to students who are underprepared in these subjects. Also, this is the first CPE report to include institutional placement exams, and the difficulties of collecting and analyzing this data have not been completely worked out. Not all institutions have institutional exam results in their student information management systems, and many had difficulty filling this data gap.

Are underprepared students taking developmental education?

This core question reflects the degree to which institutions are following the mandatory placement policy as it is set forth in legislation. To answer this question, we will begin by looking at students who are underprepared in a given subject, and see which courses they have taken in that subject and whether or not they placed out of developmental education based on an institutional placement exam. This portion of the analysis will focus on underprepared students who were retained to the second year, because these students have had at least two semesters in which to take a developmental class and have not dropped out before having an opportunity to take developmental coursework.

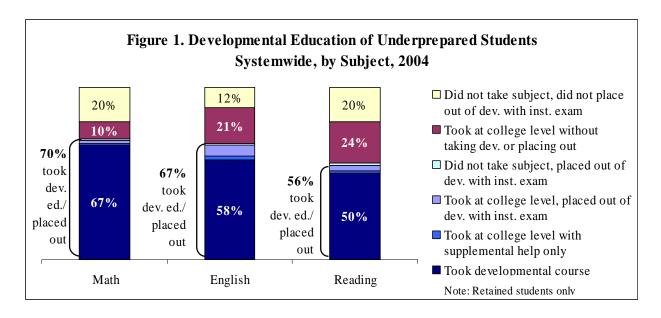


Figure 1 summarizes the placement exams and courses taken by underprepared students in all three subjects. System-wide, two-thirds of underprepared students in math took a developmental course. One percent took a college-level math course with supplemental help as provided for in the policy (students who took both developmental and supplemented college-level courses are categorized here as having taken developmental). An additional three percent of underprepared students placed out of developmental education in math through an institutional placement exam. All of these categories add up to a total of 70 percent of students who entered

with developmental needs in math either taking developmental education or placing out of developmental coursework.

Underprepared students in math who did not take developmental courses or place out fell into one of two categories, either they took a college-level math course anyway (10 percent), or they avoided taking any math classes at all in their first two years of college (20 percent). When students who were not retained are taken into account, the number of students underprepared in math who took a developmental course or placed out drops from 70 to 63 percent (Table 1).

Among students who were underprepared in English (Table 2), two-thirds of students took developmental courses or placed out (67 percent). 58 percent of students took a developmental course, two percent took a supplemented college-level course, and seven percent placed out of developmental education through an institutional exam.

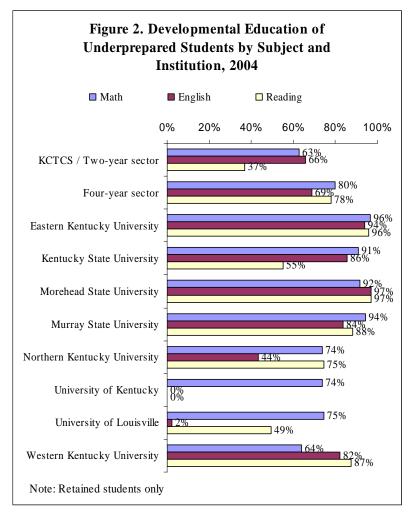
Unlike math, students who did not take developmental courses or place out were more likely to go ahead and take college-level English than they were to skip English altogether. 21 percent of students underprepared in English took a college-level English courses without developmental courses or placing out, while 12 percent skipped English during their first two years. When students who were not retained are taken into account, the number of students underprepared in English who took an English developmental course or placed out drops slightly from 67 to 63 percent.

Reading was the subject in which students' developmental needs were served the least well as measured by developmental course taking and placements (Table 3). System-wide, only a slim majority of 56 percent of students with developmental needs in reading either took a developmental reading class or placed out with an institutional exam. 50 percent of students took developmental courses, 1 percent took college-level courses with supplemental reading instruction, and 5 percent placed out of developmental coursework.

Of the underprepared students in reading who did not take developmental reading or place out, more took a college-level social science course anyway than did not, 24 percent compared to 20 percent. Because reading is not offered at the college level, this report uses a student's first social science course to gauge students' progress, and this is the only type of course that CPE has tracked for this purpose to date. These courses were chosen because they are usually reading intensive, but certainly other types of courses are equally reading intensive and should be considered in future research.

Figure 2 presents a comparison of underprepared students' developmental education by sector and at each of Kentucky's public postsecondary institutions (retained students only). In math and reading, the four-year sector had substantially higher rates of developmental education or placing out than the two-year sector, and slightly higher rates in English. More information can be found in table 4 of this report and in tables 1-3 of the institutional tables.

Wide variation in the reach of developmental education can be seen among the four-year institutions. Over 90 percent of underprepared students at Eastern Kentucky University and Morehead State University took some form of developmental education or placed out in all three subjects.



These institutions lead the state in meeting the developmental needs of their students. The majority of underprepared students at the other regional comprehensive universities also took developmental education or placed out in all three subjects, with the exception of students underprepared in English at Northern. At the research universities, developmental education rates were high in math, but quite low in English and reading, especially at the University of Kentucky. Please note that, as explained in the description of the data limitations above, this report only includes developmental coursework and placement exams, and does not include other academic services that some institutions provide to underprepared students in lieu of coursework, such as individual tutoring.

Tables 5 and 6 present two other perspectives on developmental education at the system, sector and institutional levels. Table 5 looks at all the students who were underprepared in one or more subject, and gives the percent of these students who took developmental education or placed out in at least one subject. These percentages represent the reach of an institution's developmental education program, and encompass students who were not retained as well as those who were. KCTCS and the comprehensive universities got 75 percent or more of their underprepared students into developmental education or placed them out, while the research universities (UK and UofL) had lower rates. Table 6 shows how well institutions reached the

neediest students, those who were underprepared in all three subjects, with at least one developmental education course or placement. The comprehensive universities all channeled over 90 percent of their highly underprepared students into developmental education, while this number was between 57 and 82 percent at KCTCS and the research universities.

How did students do in their first developmental education course?

Underprepared students' grades in their first developmental course in math, English and reading are presented in tables 7-9. Math appears to be the subject with which students have the most difficultly. A much lower percentage of students successfully completed their first developmental math course than completed developmental English or reading, and students got fewer A's and B's in developmental math. This pattern was repeated in the institutions' tables, and probably reflects the depth of students' developmental math needs when they entered college.

How does developmental education affect student success?

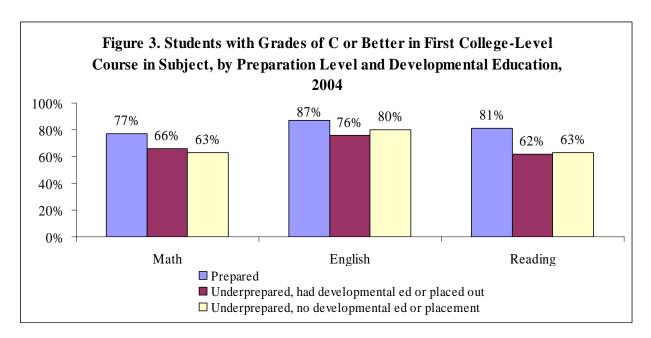
A full answer to this important question goes beyond the scope of this report, but the following information is provided to suggest some possibilities and to raise questions. Student success is affected by a number of factors and, while preparation level and developmental education are important, they are far from determinative. The tables in this report are limited to these factors only, and do not use a methodology that could support causal claims. For instance, an important factor in student success that is not captured in this report is the depth of students' developmental needs or the heights of prepared students' skills, as the cut-offs defined in the mandatory placement policy lump together students of widely varying skills. Some underprepared students have ACT scores right at the cut-off, while others have very low scores, and may require multiple developmental education courses in a subject to move to the college level. Prepared students also have widely varying skills. Students with high ACT scores are more likely to succeed in college than those with ACT scores right above the cut-off. This is especially the case in math, where, according to research conducted by ACT Inc., an ACT math score at or slightly above the cut-off of 18 does not indicate that a student is fully prepared for college-level mathematics.

Another caution about these tables was discussed at the beginning of this report – the fact that data about all possible developmental services was not available. Students receiving tutoring, etc. would appear in these tables as not having received developmental education or placing out. In cases where it appears that developmental education did not actually help underprepared students, it is very possible that needier students were placed in developmental education, while those with fewer needs were given another sort of academic support that is not captured in this report. In that case, what appears to be a difference between students who received developmental services and those who did not, may in fact be due to differences between students' preparation levels when they entered college.

Developmental education and grades in first college-level courses

Perhaps the primary measure of a student's success in developmental education is the grade they received in their first college-level course in the same subject. Figure 3 compares the grades of three categories of students, those who came to college prepared in a subject, underprepared students in a subject who received developmental education or placed out, and underprepared students in a subject who did not take developmental education or place out (Tables 10 - 15).

Across all three subjects, the primary difference at the system level was between prepared students and underprepared students, regardless of developmental education, a finding that emphasizes the importance of student preparation. However, in some subjects and at some institutions, underprepared students who took developmental education did almost or as well as their prepared counterparts. Underprepared, developmental students at Eastern, KCTCS, Louisville, Morehead, Murray and Northern all performed close or equal to prepared students on their first college-level course in at least one subject. This was the case in English and/or reading at these institutions, and for math as well at KCTCS. These institutions' successes point to the importance of developmental education and its potential to help students succeed.



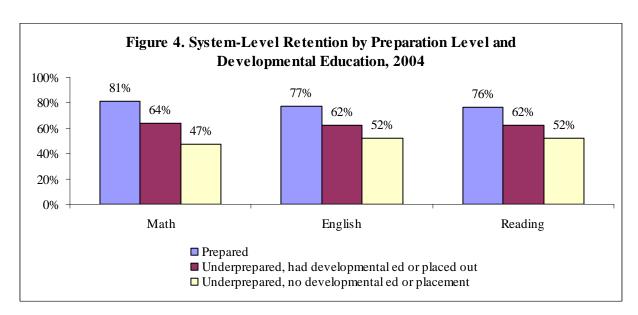
Another question that arises is how well underprepared students who had developmental education or placed out compared to those who did not. Figure 3 might suggest that only underprepared students in math actually benefited from developmental education, because only in math did underprepared, developmental students have higher success rates than underprepared, non-developmental students. This conclusion must be treated with extreme caution, however, because it is complicated by the pattern of developmental offerings at the institutions. The Universities of Kentucky and Louisville do not offer developmental or supplemented courses in English, and UK does not offer these courses in reading either. At the comprehensives that have the most extensive developmental education programs, so few underprepared students skip developmental education that those institutions' numbers in this

category are too small to be reliable. Another complicating factor is the underreporting of supplemental courses in reading as described in the introduction, and the exclusion of other types of reading intensive courses from this measure. Northern, Western and KCTCS are the only institutions with considerable numbers of non-developmental underprepared students, and they show quite mixed results. Because of these complications, it is difficult to draw conclusions about the relative performance of developmental and non-developmental underprepared students at the institutional or system level based on this data, although the results do raise questions about the lower levels of developmental education in English and reading at some institutions.

It is important to note that generalizing about student grades is always problematic, as a particular letter grade does not have the same value at different institutions, or even among different instructors at a single institution. Given this caveat, these results do suggest that developmental education can bring underprepared students to a similar level as prepared students, and that further attention to and investigation of developmental education in English and reading may be warranted.

Developmental education and retention to the second year

The Developmental Education Update published in October of 2006 showed that students who came to college with developmental needs in 2004 were less likely to be retained to a second year of study than were prepared students at both the institutional and system level. Figure 4 separates these underprepared students into two categories, those who took developmental education or placed out and those who did not, and compares them to prepared students (Tables 16-18). This comparison shows that while developmental education does appear to help retain underprepared students, there is still a wide gap between prepared



students and underprepared students who took developmental education. These differences are largest in math. 64 percent of students who were underprepared in math and who received developmental education were retained at the system level, a number that is considerably lower than that of prepared students, 81 percent of whom were retained, and considerably higher than

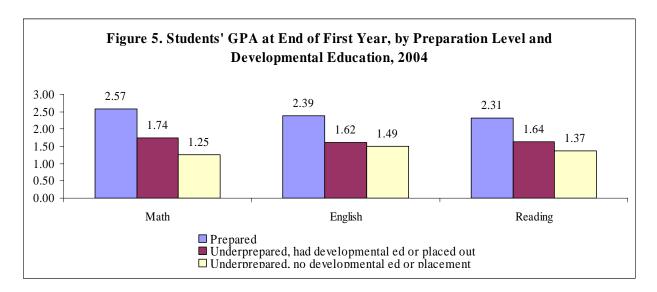
the 47 percent of underprepared students who did not take developmental education as defined in this report. This same pattern can be seen in both English and reading, but with somewhat smaller differences between the three types of students.

Tables 16-18 also show differences in retention rates by the type of developmental education or services provided to underprepared students. Although the numbers were small, students who took supplemented college-level courses were retained at substantially higher rates than those in traditional developmental education courses. While this is positive news about supplemented courses, it must be tempered by the fact that some institutions reserve these courses for students with less developmental needs, students who could be expected to be retained at higher rates regardless of developmental education. It is also interesting that underprepared students who placed out of developmental coursework were retained at higher levels than those who took developmental courses, although these students would also be entering college with less developmental needs than those who did not place out.

This pattern is repeated in most of the institutional reports as well. Even institutions with high admissions standards or strong developmental education programs have a retention gap concerning underprepared students. The exceptions were KSU, UK and UofL. UK's underprepared, non-developmental students in math were retained at higher levels than those who took developmental math or even prepared students, although the numbers were small. UK reports that these students would have received other forms of academic support. KSU's underprepared, developmental students in English and UofL's underprepared, developmental students in reading were retained at a higher rate than prepared students, suggesting that the extra academic support had a positive impact on these students.

Developmental Education and GPA at the End of the First Year

Figure 5 summarizes the association between preparation level, developmental education and a student's GPA at the end of their first year of college, our third measure of student success (tables 19-21). There is a familiar pattern here of prepared students having a higher GPA than underprepared students, and underprepared developmental students having a higher GPA than underprepared non-developmental students. It also appears that at the system-level, GPA is more closely associated with preparation level than with developmental education.



The pattern above is repeated in most of the institutional reports as well. The exceptions are KCTCS, Northern and Western, all of which show underprepared, non-developmental students with a higher GPA at the end of their first year than underprepared students who took developmental courses or placed out, but only in English and/or reading. Without further information, it is difficult to draw conclusions about these cases and why they are different. These findings do, however, raise questions about developmental education in English and reading and these institutions and about the data that was submitted.

Summary

The most important issue covered in this report is the extent of the developmental education provided to underprepared students across the commonwealth. The mandatory placement policy requires that all students who are underprepared have some form of developmental education, but this does not appear to have been the case at all institutions. While data problems do persist, numbers are low enough statewide and at many institutions to raise questions about how well the policy is being enforced at the campus level. Many conditions are needed campus-wide to ensure that every student who enters with a developmental need has some form of developmental education. Every student must go through a placement process, and they can not be able avoid the developmental services into which they have been placed. The fact that two institutions, Eastern Kentucky University and Morehead State University, provide developmental education and placements to over 90 percent of their underprepared students in all

three subjects demonstrates that these measures are possible and effective. Also, the comparatively low rates of underprepared students who received developmental education at KCTCS warrants further study.

This report suggests that more attention should be given to developmental English and reading. Math is the subject area of greatest need in the commonwealth and nationwide, and it is the developmental subject that is reaching the most underprepared students. While attention to developmental math is vital, this report does not find that math is any more important than English or reading to student retention or GPA at the end of the first year. Developmental education in English and reading are both important to student success, and the relatively low rates of developmental education provided to underprepared students in these subjects is an area of concern.

It is true that not all forms of developmental education are captured in this report. Some underprepared students who did not take developmental education or place out would have received tutoring or other academic services. To improve the implementation of this policy, this data gap should be addressed in some way, either through clarification of the policy or through expanded student tracking at the institutional and state levels. Institutional placement exams are another area in which further clarification at the policy level and in data collection would be helpful.

Regarding the association between developmental education and student success, this report provides numerous examples of this association. At several institutions, underprepared students who took developmental courses or placed out performed almost or as well as their prepared counterparts in their first college-level class. System-wide and at most institutions, developmental education was associated with higher retention rates and GPAs among underprepared students. But virtually across the board, the preparation level of students when they first entered college remained important to their success, regardless of whether or not they received developmental education. These findings argue both that developmental education can be quite effective, and that Kentucky needs to continue its work to ensure that every student, traditional or adult, comes to college equipped with college-level skills in math, writing and reading.

Table 1. Students Underprepared in Math: First Developmental or College-Level Math Course Taken, by Retention Status, 2004

		Under- prepared in math	Percent
	First developmental or college math courses taken:		
Retained at native institution	Took developmental course	3,994	66.5%
	Took at college level with supplemental help only	43	0.7%
	Took at college level, placed out of dev. with inst. exam	125	2.1%
	Took at college level without taking dev. or placing out	585	9.7%
	Did not take subject, placed out of dev. with inst. exam	51	0.8%
	Did not take subject, did not place out of dev. with inst. exam	1,207	20.1%
	Total	6,005	100.0%
	Took developmental course or placed out in math?		
	Took dev./suppl. education or placed out	4,213	70.2%
	Did not take dev./suppl. education or place out	1,792	29.8%
Not retained at native institution	First developmental or college math courses taken:		
	Took developmental course	2,693	52.1%
	Took at college level with supplemental help only	11	0.2%
	Took at college level, placed out of dev. with inst. exam	44	0.9%
	Took at college level without taking dev. or placing out	222	4.3%
	Did not take subject, placed out of dev. with inst. exam	65	1.3%
	Did not take subject, did not place out of dev. with inst. exam	2,138	41.3%
	Total	5,173	100.0%
	Took developmental course or placed out in math?		
	Took dev./suppl. education or placed out	2,813	54.4%
	Did not take dev./suppl. education or place out	2,360	45.6%

Table 1. Students Underprepared in Math: First Developmental or College-Level Math Course Taken, by Retention Status, 2004

		Under- prepared in math	Percent
Total students underprepared in	First developmental or college math courses taken:		
math	Took developmental course	6,687	59.8%
	Took at college level with supplemental help only	54	0.5%
	Took at college level, placed out of dev. with inst. exam	169	1.5%
	Took at college level without taking dev. or placing out	807	7.2%
	Did not take subject, placed out of dev. with inst. exam	116	1.0%
	Did not take subject, did not place out of dev. with inst. exam	3,345	29.9%
	Total	11,178	100.0%
	Took developmental course or placed out in math?		
	Took dev./suppl. education or placed out	7,026	62.9%
	Did not take dev./suppl. education or place out	4,152	37.1%

Table 2. Students Underprepared in English: First Developmental or College-Level English Course Taken, by Retention Status, 2004

		Under- prepared in English	Percent
	First developmental or college English course taken:		
Retained at native institution	Took developmental course	2,535	58.0%
	Took at college level with supplemental help only	102	2.3%
	Took at college level, placed out of dev. with inst. exam	272	6.2%
	Took at college level without taking dev. or placing out	910	20.8%
	Did not take subject, placed out of dev. with inst. exam	35	0.8%
	Did not take subject, did not place out of dev. with inst. exam	515	11.8%
	Total	4,369	100.0%
	Took developmental course or placed out in English?		
	Took dev./suppl. education or placed out	2,944	67.4%
	Did not take dev./suppl. education or place out	1,425	32.6%
Not retained at native institution	First developmental or college English course taken:		
	Took developmental course	1,916	51.1%
	Took at college level with supplemental help only	30	0.8%
	Took at college level, placed out of dev. with inst. exam	141	3.8%
	Took at college level without taking dev. or placing out	366	9.8%
	Did not take subject, placed out of dev. with inst. exam	67	1.8%
	Did not take subject, did not place out of dev. with inst. exam	1,227	32.7%
	Total	3,747	100.0%
	Took developmental course or placed out in English?		
	Took dev./suppl. education or placed out	2,154	57.5%
	Did not take dev./suppl. education or place out	1,593	42.5%

Table 2. Students Underprepared in English: First Developmental or College-Level English Course Taken, by Retention Status, 2004

		Under- prepared in English	Percent
Total students underprepared in	First developmental or college English course taken:		
English	Took developmental course	4,451	54.8%
	Took at college level with supplemental help only	132	1.6%
	Took at college level, placed out of dev. with inst. exam	413	5.1%
	Took at college level without taking dev. or placing out	1,276	15.7%
	Did not take subject, placed out of dev. with inst. exam	102	1.3%
	Did not take subject, did not place out of dev. with inst. exam	1,742	21.5%
	Total	8,116	100.0%
	Took developmental course or placed out in English?		
	Took dev./suppl. education or placed out	5,098	62.8%
	Did not take dev./suppl. education or place out	3,018	37.2%

Table 3. Students Underprepared in Reading: First Developmental Reading or College-Level Social Science Course Taken, by Retention Status, 2004

		Underprepared in reading	Percent
	First developmental reading or college social science course taken:		
Retained at native	Took developmental course	1,648	50.4%
institution	Took at college level with supplemental help only	43	1.3%
	Took at college level, placed out of dev. with inst. exam	102	3.1%
	Took at college level without taking dev. or placing out	776	23.7%
	Did not take subject, placed out of dev. with inst. exam	50	1.5%
	Did not take subject, did not place out of dev. with inst. exam	651	19.9%
	Total	3,270	100.0%
	Took developmental course or placed out in reading?		
	Took dev./suppl. education or placed out	1,843	56.4%
	Did not take dev./suppl. education or place out	1,427	43.6%
Not retained at native institution	First developmental reading or college social science course taken:		
	Took developmental course	1,237	42.5%
	Took at college level with supplemental help only	13	0.4%
	Took at college level, placed out of dev. with inst. exam	32	1.1%
	Took at college level without taking dev. or placing out	386	13.3%
	Did not take subject, placed out of dev. with inst. exam	82	2.8%
	Did not take subject, did not place out of dev. with inst. exam	1,163	39.9%
	Total	2,913	100.0%
	Took developmental course or placed out in reading?		
	Took dev./suppl. education or placed out	1,364	46.8%
	Did not take dev./suppl. education or place out	1,549	53.2%

Note: The college-level courses with supplemental help referenced above are social science courses with supplemental reading help, as reading is not offered at the college level. Categories reflect the first course of its type taken as of a student's last semester of enrollment within their first two years. Students taking both developmental and supplemented college-level courses are counted in the developmental category. Course counts do not include students who withdrew. Developmental courses taken by university students at KCTCS are included in the university's developmental course total.

Table 3. Students Underprepared in Reading: First Developmental Reading or College-Level Social Science Course Taken, by Retention Status, 2004

		Underprepared in reading	Percent
Total students underprepared in reading	First developmental reading or college social science course taken:		
	Took developmental course	2,885	46.7%
	Took at college level with supplemental help only	56	0.9%
	Took at college level, placed out of dev. with inst. exam	134	2.2%
	Took at college level without taking dev. or placing out	1,162	18.8%
	Did not take subject, placed out of dev. with inst. exam	132	2.1%
	Did not take subject, did not place out of dev. with inst. exam	1,814	29.3%
	Total	6,183	100.0%
	Took developmental course or placed out in reading?		
	Took dev./suppl. education or placed out	3,207	51.9%
	Did not take dev./suppl. education or place out	2,976	48.1%

Note: The college-level courses with supplemental help referenced above are social science courses with supplemental reading help, as reading is not offered at the college level. Categories reflect the first course of its type taken as of a student's last semester of enrollment within their first two years. Students taking both developmental and supplemented college-level courses are counted in the developmental category. Course counts do not include students who withdrew. Developmental courses taken by university students at KCTCS are included in the university's developmental course total.

Table 4. Underprepared Students in a Subject who Took a Developmental Course in that Subject or Placed Out, By Subject (Summary of Institutional Tables 1 - 3)

		Ma	th	Engl	ish	Read	ling
	cohort who were first semester of r	Number of under- prepared students	Percent in dev. ed. or placed out	Number of under- prepared students	Percent in dev. ed. or placed out	Number of under- prepared students	Percent in dev. ed. or placed out
Four-year public	Eastern Kentucky University	498	96.4%	372	93.8%	248	96.0%
	Kentucky State University	140	90.7%	118	85.6%	105	55.2%
	Morehead State University	317	91.8%	281	96.8%	192	96.9%
	Murray State University	180	94.4%	115	83.5%	93	88.2%
	Northern Kentucky University	412	73.8%	469	43.5%	269	74.7%
	University of Kentucky	142	73.9%	102	0%	108	0%
	University of Louisville	174	74.7%	134	2.1%	85	49.4%
	Western Kentucky University	686	64.0%	552	82.2%	466	87.3%
	Sector Total	2,549	80.3%	2,143	68.9%	1,566	77.5%
Two-year public	KCTCS	3,456	62.7%	2,226	65.9%	1,704	36.9%
TOTAL		6,005	70.2%	4,369	67.4%	3,270	56.4%

Note: College-level courses in subjects other than social sciences that offer supplemental instruction in reading are not included in the reading totals, creating an underestimate of developmental education in reading for Northern, Louisville and Western. KSU information concerning students who placed out of developmental education based on non-compulsory institutional exams was not available. Table includes only students who were retained to the first semester of their second year in order to exclude students who left school during their first semester.

Table 5. Students Underprepared in One or More Subjects Who Took Developmental Education or Placed Out in at Least One Subject, 2004

			Underp	repared
		Students underprepared in one or more subjects	To develop educat placed o least one	mental ion or out in at
		<u> </u>		
Four-year public	Eastern Kentucky University	1,207	6.0%	94.0%
	Kentucky State University	293	13.0%	87.0%
	Morehead State University	820	11.1%	88.9%
	Murray State University	432	11.1%	88.9%
	University of Kentucky	425	56.7%	43.3%
	University of Louisville	452	31.6%	68.4%
	Western Kentucky University	1,527	20.6%	79.4%
	Northern Kentucky University	1,105	18.7%	81.3%
	Sector Total	6,261	18.4%	81.6%
Two-year public	Ky. Comm. & Tech. Coll. Sys.	7,555	24.3%	75.7%
TOTAL		13,816	21.6%	78.4%

Note: Includes students who were underprepared in one or more subjects (regardless of retention status) and who took developmental education or placed out in any subject, not only the subject(s) in which they were underprepared. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. College-level courses in subjects other than social sciences that offer supplemental instruction in reading are not included in the reading totals, creating an underestimate of developmental education in reading for Northern, Louisville and Western. KSU information concerning students who placed out of developmental education based on non-compulsory institutional exams was not available.

Table 6. Developmental Education of Students with the Greatest Developmental Needs, 2004

		Students underprepared in math,	Percent with dev. cour or placed out in at lea one subject	
		English and reading	No	Yes
Four-year public	Eastern Kentucky University	222	1.8%	98.2%
	Kentucky State University	120	7.5%	92.5%
	Morehead State University	232	9.5%	90.5%
	Murray State University	48	8.3%	91.7%
	University of Kentucky	11	18.2%	81.8%
	University of Louisville	16	25.0%	75.0%
	Western Kentucky University	468	4.5%	95.5%
	Northern Kentucky University	238	4.6%	95.4%
	Sector Total	1,355	5.7%	94.3%
Two-year public	Ky. Comm. & Tech. Coll. Sys.	2,333	24.1%	75.9%
TOTAL		3,688	17.3%	82.7%

Note: Developmental courses and placements include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Students are included regardless of their retention to the second year. College-level courses in subjects other than social sciences that offer supplemental instruction in reading are not included in the reading totals, creating an underestimate of developmental education in reading for Northern, Louisville and Western. KSU information concerning students who placed out of developmental education based on non-compulsory institutional exams was not available.

Table 7. Grade in First Developmental Math Course: Students Underprepared in Math, 2004

	N	%
Grade in first developmental math course		
A	952	12.2%
В	1,332	17.1%
C	1,412	18.1%
D	248	3.2%
F/E	959	12.3%
KCTCS, failed on P/F (no impact on GPA)	1,090	14.0%
Incomplete	72	0.9%
Making progress in dev., not ready for college level	122	1.6%
Passing on P/F	241	3.1%
Unofficial withdrawal (0 pts)	123	1.6%
Withdrew	1,127	14.4%
Moved to college-level course during the term	123	1.6%
Total	7,801	100.0%
Successful completion of first developmental math course		
Did not successfully complete first course	3,741	48.0%
Successfully completed first course	4,060	52.0%

Note: Grade in first developmental math course only. Successful completion includes receiving a grade of A-C or being moved to a college-level course.

Table 8. Grade in First Developmental English Course: Students Underprepared in English, 2004

	N	%
Grade in first developmental English course		
A	1,025	21.0%
В	1,220	25.0%
C	744	15.3%
D	89	1.8%
F/E	442	9.1%
KCTCS, failed on P/F (no impact on GPA)	413	8.5%
Incomplete	18	0.4%
Making progress in dev., not ready for college level	87	1.8%
Passing on P/F	244	5.0%
Unofficial withdrawal (0 pts)	59	1.2%
Withdrew	430	8.8%
Moved to college-level course during the term	106	2.2%
Total	4,877	100.0%
Successful completion of first developmental English course		
Did not successfully complete first course	1,538	31.5%
Successfully completed first course	3,339	68.5%

Note: Grade in first developmental English course only. Successful completion includes receiving a grade of A-C or being moved to a college-level course.

Table 9. Grades in First Developmental Reading Course: Students Underprepared in Reading, 2004

	N	%
Grade in first developmental reading course		
A	823	26.3%
В	646	20.6%
C	451	14.4%
D	82	2.6%
F/E	215	6.9%
KCTCS, failed on P/F (no impact on GPA)	230	7.3%
Incomplete	11	0.4%
Making progress in dev., not ready for college level	38	1.2%
Passing on P/F	132	4.2%
Unofficial withdrawal (0 pts)	50	1.6%
Withdrew	250	8.0%
Moved to college-level course during the term	205	6.5%
Total	3,133	100.0%
Successful completion of first developmental reading course		
Did not successfully complete first course	876	28.0%
Successfully completed first course	2,257	72.0%

Table 10. Students' Grades in their First College-Level Math Course by Preparation Level and Developmental Education in Math, 2004

	Grade in first college-level math course					Students taking
	A	В	C	D	F	college- level math
Prepared	28.2%	27.7%	21.3%	10.7%	12.2%	10,281
Underprepared, took dev. course or placed out	14.4%	23.0%	28.8%	13.3%	20.5%	2,424
Underprepared, no dev. course or placement out	16.1%	20.5%	26.0%	12.2%	25.2%	801
All students	25.0%	26.4%	22.9%	11.2%	14.5%	13,506

Table 11. Students with Grades of C or Better in their First College-Level Math Course by Preparation Level and Type of Education in Math, 2004

		Students taking college-level math 10,281 896 196 596 8,593 2,424 2,201 54 169 801	Grade i college-lev cour	el math
			A-C	D-F
Students' preparation level				
Prepared	Total	10,281	77.1%	22.9%
	Developmental courses or placements in math:			
	Took developmental course	896	71.3%	28.7%
	Took at college level with supplemental help only	196	79.1%	20.9%
	Took at college level, placed out of dev. with inst. exam	596	71.0%	29.0%
	Took at college level without taking dev. or placing out	8,593	78.1%	21.9%
Underprepared, took dev.	Total	2,424	66.2%	33.8%
course or placed out	Developmental courses or placements in math:			
	Took developmental course	2,201	66.2%	33.8%
	Took at college level with supplemental help only	54	74.1%	25.9%
	Took at college level, placed out of dev. with inst. exam	169	63.3%	36.7%
Underprepared, no dev.	Total	801	62.5%	37.5%
course or placement out	Developmental courses or placements in math:			
	Took at college level without taking dev. or placing out	801	62.5%	37.5%

Table 12. Students' Grades in their First College-Level English Course by Preparation Level and Developmental Education in English, 2004

	Grade	Students taking				
	A	В	C	D	\mathbf{F}	college-level English
Prepared	35.0%	34.5%	17.1%	3.4%	10.1%	13,960
Underprepared, took dev. course or placed out	15.3%	33.6%	27.1%	7.8%	16.2%	2,960
Underprepared, no dev. course or placement out	20.6%	35.1%	23.8%	6.3%	14.2%	1,270
All students	30.8%	34.4%	19.2%	4.3%	11.3%	18,190

Table 13. Students with Grades of C or Better in their First College-Level English Course by Preparation Level and Type of Education in English, 2004

		24: 63: 1,583: 12,069: 2,960: 2,420: 133:	Grade i college-leve cour	el English
		0	A-C	D-F
Students' preparation level				
Prepared	Total	13,960	86.6%	13.4%
	Developmental courses or placements in English:			
	Took developmental course	245	76.3%	23.7%
	Took at college level with supplemental help only	63	74.6%	25.4%
	Took at college level, placed out of dev. with inst. exam	1,583	69.7%	30.3%
	Took at college level without taking dev. or placing out	12,069	89.1%	10.9%
Underprepared, took dev.	Total	2,960	76.0%	24.0%
course or placed out	Developmental courses or placements in English:			
	Took developmental course	2,420	76.1%	23.9%
	Took at college level with supplemental help only	132	89.4%	10.6%
	Took at college level, placed out of dev. with inst. exam	408	71.1%	28.9%
Underprepared, no dev.	Total	1,270	79.5%	20.5%
course or placement out	Developmental courses or placements in English:			
	Took at college level without taking dev. or placing out	1,270	79.5%	20.5%

Table 14. Students' Grades in their First College-Level Social Science Course by Preparation Level and Developmental Education in Reading, 2004

	Grade A	in first collo	ege-level soo	cial science c	ourse F	Students taking college-level social science
Prepared	26.2%	31.9%	23.0%	8.7%	10.1%	12,968
Underprepared, took dev. course or placed out	8.5%	23.4%	29.9%	17.8%	20.3%	1,580
Underprepared, no dev. course or placement out	11.2%	22.5%	29.0%	13.2%	24.0%	1,157
All students	23.3%	30.4%	24.1%	10.0%	12.2%	15,705

Note: Table reflects student performance in first social science course only, and not other kinds of reading-intensive courses. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Grades are normalized across institutions such that F=failure. Students taking their first college-level course in this subject on a pass/fail basis for no quality points are not included in the total. Missing data may cause totals to differ across tables.

Table 15. Students with Grades of C or Better in their First College-Level Social Science Course by Preparation Level and Type of Education in Reading, 2004

		Students taking college- level social	Grade in firs level social cours	science
		science	A-C	D-F
Students' preparation level				
Prepared	Total	12,968	81.1%	18.9%
	Developmental courses or placements in reading:			
	Took developmental course	119	63.9%	36.1%
	Took at college level with supplemental help only	45	86.7%	13.3%
	Took at college level, placed out of dev. with inst. exam	16	93.8%	6.3%
	Took at college level without taking dev. or placing out	12,788	81.2%	18.8%
Underprepared, took dev.	Total	1,580	61.8%	38.2%
course or placed out	Developmental courses or placements in reading:			
	Took developmental course	1,392	61.0%	39.0%
	Took at college level with supplemental help only	55	89.1%	10.9%
	Took at college level, placed out of dev. with inst. exam	133	59.4%	40.6%
Underprepared, no dev.	Total	1,157	62.7%	37.3%
course or placement out	Developmental courses or placements in reading:			
	Took at college level without taking dev. or placing out	1,157	62.7%	37.3%

Note: Table reflects student performance in first social science course only, and not other kinds of reading-intensive courses. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Grades are normalized across institutions such that F=failure. Students taking their first college-level course in this subject on a pass/fail basis for no quality points are not included in the total. Missing data may cause totals to differ across tables.

Table 16. Students' Retention to the Second Year by Math Preparation Level and Type of Math Education, 2004

			Institution	al retention	System re	etention
			Retained at native institution	Not retained at native institution	Retained at any KY PSE institution	Not retained in KY PSE system
Students' preparation level						
Prepared	Total	14,632	73.3%	26.7%	80.8%	19.2%
	Developmental courses or placements in math:					
	Took developmental course	1,529	68.0%	32.0%	76.1%	23.9%
	Took at college level with supplemental help only	176	77.3%	22.7%	83.0%	17.0%
	Took at college level, placed out of dev. with inst. exam	600	68.3%	31.7%	74.5%	25.5%
	Took at college level without taking dev. or placing out	8,676	80.9%	19.1%	87.5%	12.5%
	Did not take subject, placed out of dev. with inst. exam	182	51.6%	48.4%	57.1%	42.9%
	Did not take subject, did not place out of dev. with inst. exam	3,469	58.5%	41.5%	68.5%	31.5%
Underprepared,	Total	6,807	59.0%	41.0%	64.0%	36.0%
took dev. course or placed out	Developmental courses or placements in math:					
	Took developmental course	6,478	58.8%	41.2%	63.8%	36.2%
	Took at college level with supplemental help only	44	75.0%	25.0%	81.8%	18.2%
	Took at college level, placed out of dev. with inst. exam	169	74.0%	26.0%	77.5%	22.5%
	Did not take subject, placed out of dev. with inst. exam	116	44.0%	56.0%	48.3%	51.7%

Table 16. Students' Retention to the Second Year by Math Preparation Level and Type of Math Education, 2004

			Institution	al retention	System retention	
			Retained at native institution	Not retained at native institution	Retained at any KY PSE institution	Not retained in KY PSE system
Underprepared,	Total	4,152	43.2%	56.8%	47.2%	52.8%
no dev. course or placement out	Developmental courses or placements in math:					
	Took at college level without taking dev. or placing out	807	72.5%	27.5%	77.2%	22.8%
	Did not take subject, did not place out of dev. with inst. exam	3,345	36.1%	63.9%	39.9%	60.1%

Table 17. Students' Retention to the Second Year by English Preparation Level and Type of English Education, 2004

			Institution	al retention	System re	etention
			Retained at native institution	Not retained at native institution	Retained at any KY PSE institution	Not retained in KY PSE system
Students' preparation level						
Prepared	Total	17,843	69.9%	30.1%	76.9%	23.1%
	Developmental courses or placements in English:					
	Took developmental course	397	58.9%	41.1%	62.2%	37.8%
	Took at college level with supplemental help only	60	66.7%	33.3%	80.0%	20.0%
	Took at college level, placed out of dev. with inst. exam	1,602	61.2%	38.8%	64.7%	35.3%
	Took at college level without taking dev. or placing out	12,229	78.2%	21.8%	85.0%	15.0%
	Did not take subject, placed out of dev. with inst. exam	334	45.5%	54.5%	47.9%	52.1%
	Did not take subject, did not place out of dev. with inst. exam	3,221	47.0%	53.0%	57.0%	43.0%
Underprepared,	Total	5,013	57.3%	42.7%	62.1%	37.9%
took dev. course or placed out	Developmental courses or placements in English:					
	Took developmental course	4,374	56.5%	43.5%	61.2%	38.8%
	Took at college level with supplemental help only	124	75.8%	24.2%	82.3%	17.7%
	Took at college level, placed out of dev. with inst. exam	413	65.9%	34.1%	72.2%	27.8%
	Did not take subject, placed out of dev. with inst. exam	102	34.3%	65.7%	37.3%	62.7%

Table 17. Students' Retention to the Second Year by English Preparation Level and Type of English Education, 2004

			Institution	al retention	System retention	
			Retained at native institution	Not retained at native institution	Retained at any KY PSE institution	Not retained in KY PSE system
Underprepared, no	Total	3,018	47.2%	52.8%	51.6%	48.4%
dev. course or placement out	Developmental courses or placements in English:					
	Took at college level without taking dev. or placing out	1,276	71.3%	28.7%	76.6%	23.4%
	Did not take subject, did not place out of dev. with inst. exam	1,742	29.6%	70.4%	33.2%	66.8%

Table 18. Students' Retention to the Second Year by Reading Preparation Level and Type of Education in Reading, 2004

			Institution	al retention	System re	etention
			Retained at native institution	Not retained at native institution	Retained at any KY PSE institution	Not retained in KY PSE system
Students' preparation level						
Prepared	Total	18,600	68.6%	31.4%	75.6%	24.4%
	Developmental courses or placements in reading:					
	Took developmental course	205	63.9%	36.1%	67.3%	32.7%
	Took at college level with supplemental help only	41	63.4%	36.6%	73.2%	26.8%
	Took at college level, placed out of dev. with inst. exam	16	93.8%	6.3%	93.8%	6.3%
	Took at college level without taking dev. or placing out	12,862	78.5%	21.5%	85.0%	15.0%
	Did not take subject, placed out of dev. with inst. exam	16	31.3%	68.8%	56.3%	43.8%
	Did not take subject, did not place out of dev. with inst. exam	5,460	45.4%	54.6%	53.9%	46.1%
Underprepared,	Total	3,166	57.0%	43.0%	62.3%	37.7%
took dev. course or placed out	Developmental courses or placements in reading:					
	Took developmental course	2,846	56.6%	43.4%	61.6%	38.4%
	Took at college level with supplemental help only	54	77.8%	22.2%	94.4%	5.6%
	Took at college level, placed out of dev. with inst. exam	134	76.1%	23.9%	79.9%	20.1%
	Did not take subject, placed out of dev. with inst. exam	132	37.9%	62.1%	48.5%	51.5%

Note: Only coursework taken during the first year is included in this table. The college-level courses with supplemental help referenced above are social science courses with supplemental reading help, as reading is not offered at the college level. Table reflects student performance in first social science course only, and not other kinds of reading-intensive courses. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Grades are normalized across institutions such that F=failure. Students taking this course pass/fail for no quality points are not included in the total. Missing data may cause totals to differ across tables. Kentucky Council on Postsecondary Education, November 3, 2006

Table 18. Students' Retention to the Second Year by Reading Preparation Level and Type of Education in Reading, 2004

			Institution	al retention	System re	etention
			Retained at native institution	Not retained at native institution	Retained at any KY PSE institution	Not retained in KY PSE system
Underprepared, no dev. course or	Total	2,976	48.0%	52.0%	51.6%	48.4%
placement out	Developmental courses or placements in reading:					
	Took at college level without taking dev. or placing out	1,162	66.8%	33.2%	71.9%	28.1%
	Did not take subject, did not place out of dev. with inst. exam	1,814	35.9%	64.1%	38.6%	61.4%

Note: Only coursework taken during the first year is included in this table. The college-level courses with supplemental help referenced above are social science courses with supplemental reading help, as reading is not offered at the college level. Table reflects student performance in first social science course only, and not other kinds of reading-intensive courses. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Grades are normalized across institutions such that F=failure. Students taking this course pass/fail for no quality points are not included in the total. Missing data may cause totals to differ across tables. Kentucky Council on Postsecondary Education, November 3, 2006

Table 19. Students' Grade Point Average (GPA) at End of First Year by Math Preparation Level and Type of Education in Math, 2004

		Credential-seeking entering class of 2004	GPA at end of first year
Students' preparation level			
Prepared	Total	14,632	2.57
	Developmental courses or placements in math:		
	Took developmental course	1,529	2.30
	Took at college level with supplemental help only	176	2.77
	Took at college level, placed out of dev. with inst. exam	600	1.95
	Took at college level without taking dev. or placing out	8,676	2.78
	Did not take subject, placed out of dev. with inst. exam	182	1.38
	Did not take subject, did not place out of dev. with inst. exam	3,469	2.29
Underprepared, took dev.	Total	6,807	1.74
course or placed out	Developmental courses or placements in math:		
	Took developmental course	6,478	1.72
	Took at college level with supplemental help only	44	2.56
	Took at college level, placed out of dev. with inst. exam	169	2.31
	Did not take subject, placed out of dev. with inst. exam	116	2.03
Underprepared, no dev.	Total	4,152	1.25
Underprepared, no dev. Total 4,152 course or placement out Developmental courses or placements in math:			
	Took at college level without taking dev. or placing out	_	1.99
	Did not take subject, did not place out of dev. with inst. exam	3,345	1.07

Note: Only coursework taken during the first year is included in this table. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Missing data may cause totals to differ across tables.

Table 20. Students' Grade Point Average (GPA) at End of First Year by English Preparation Level and Type of Education in English, 2004

		Credential-seeking entering class of 2004	GPA at end of first year
Students' preparation level			
Prepared	Total	17,843	2.39
	Developmental courses or placements in English:		
	Took developmental course	397	1.77
	Took at college level with supplemental help only	60	2.64
	Took at college level, placed out of dev. with inst. exam	1,602	1.56
	Took at college level without taking dev. or placing out	12,229	2.69
	Did not take subject, placed out of dev. with inst. exam	334	0.92
	Did not take subject, did not place out of dev. with inst. exam	3,221	1.88
Underprepared, took dev.	Total	5,013	1.62
course or placed out	Developmental courses or placements in English:		
	Took developmental course	4,374	1.59
	Took at college level with supplemental help only	124	2.33
	Took at college level, placed out of dev. with inst. exam	413	1.82
	Did not take subject, placed out of dev. with inst. exam	102	0.96
Underprepared, no dev.	Total	3,018	1.49
course or placement out	Developmental courses or placements in English:		
	Took at college level without taking dev. or placing out		2.21
	Did not take subject, did not place out of dev. with inst. exam	1,742	0.94

Note: Only coursework taken during the first year is included in this table. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Missing data may cause totals to differ across tables.

Table 21. Students' Grade Point Average (GPA) at End of First Year by Reading Preparation Level and Type of Education in Reading, 2004

		Credential-seeking entering class of 2004	GPA at end of first year
Students' preparation level			
Prepared	Total	18,600	2.31
	Developmental courses or placements in reading:		
	Took developmental course	205	1.55
	Took at college level with supplemental help only	41	2.27
	Took at college level, placed out of dev. with inst. exam	16	2.66
	Took at college level without taking dev. or placing out	12,862	2.58
	Did not take subject, placed out of dev. with inst. exam	16	1.77
	Did not take subject, did not place out of dev. with inst. exam	5,460	1.68
Underprepared, took	Total	3,166	1.66
dev. course or placed out	Developmental courses or placements in reading:		
	Took developmental course	2,846	1.59
	Took at college level with supplemental help only	54	2.62
	Took at college level, placed out of dev. with inst. exam	134	2.53
	Did not take subject, placed out of dev. with inst. exam	132	1.98
Underprepared, no dev.	Total		1.35
course or placement out	2,976 relopmental courses or placements in reading:		
	Took at college level without taking dev. or placing out	1,162	1.78
	Did not take subject, did not place out of dev. with inst. exam	1,814	1.06

Note: Only coursework taken during the first year is included in this table. The college-level courses with supplemental help referenced above are social science courses with supplemental reading help, as reading is not offered at the college level. Table reflects student performance in first social science course only, and not other kinds of reading-intensive courses. Developmental services include developmental courses, college-level classes with supplemental help, or placement out of developmental education based on an institutional exam. Missing data may cause totals to differ across tables.

Table 22. Entrance and Placement Exams Taken by the Entering Class of 2004

En	tranca	exams	takan
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	2004 credential-seeking cohort	ACT only	SAT only	Both ACT and SAT	Neither
Eastern Kentucky University	2,551	89.3%	2.0%	8.7%	0.0%
Kentucky State University	364	93.7%	6.0%		0.3%
Morehead State University	1,318	97.0%	3.0%		
Murray State University	1,392	98.1%			1.9%
Northern Kentucky University	2,075	83.3%	14.6%		2.1%
University of Kentucky	3,960	84.8%	8.7%	6.3%	0.2%
University of Louisville	2,369	88.1%	9.8%		2.1%
Western Kentucky University	3,051	82.3%	4.4%	7.4%	5.9%
Ky. Comm. & Tech. Coll. Sys.	10,381	41.7%	0.2%	0.0%	58.0%
Total	27,461	70.2%	4.2%	2.5%	23.1%

	Placement exams			
	Institutional assessment used for placement	Asset, Accuplacer or Compass exam used for placement	Placed without an on-campus exam	
Eastern Kentucky University	316		2,235	
Kentucky State University			364	
Morehead State University	31		1,287	
Murray State University	63		1,329	
Northern Kentucky University	124		1,951	
University of Kentucky	17		3,943	
University of Louisville	274	458	1,639	
Western Kentucky University	147	151	2,900	
Ky. Comm. & Tech. Coll. Sys.	2,815	5,530	3,523	
Total	3,787	6,139	19,171	

Note: Asset, Accuplacer and Compass placement exams were used in the assignment of student preparation levels using cut-off scores comparable to the ACT scores laid out in state policy. Institutional assessments were used to assign students who were placed out of developmental education with an institutional exam. College-level courses in subjects other than social sciences that offer supplemental instruction in reading are not included in the reading totals, creating an underestimate of developmental education in reading for Northern, Louisville and Western. KSU information concerning students who placed out of developmental education based on non-compulsory institutional exams was not available.